subsilvery, bare and moderately narrowed below; vibrissae rather short, on oral margin; facialia setose on lower fourth; antenna reddish third segment largely infuscated, exceeding twice length of second; short arista black, bare, thickened to middle, basal segments small; cheek two-fifths eye height, shiny black but with a pruinose sheen apparent in some views, groove red in ground color; proboscis short, palpus absent; eye bare; posterior orbit silvery; occiput convex, shiny black and sparsely black-haired.

Thorax and scutellum polished black, weakly bristled; three sternopleurals and post dorsocentrals; prosternum, propleuron and postnotal slope bare. Legs rather stoutish, tibiae and tarsi black remainder sharply contrasting yellow; bristling considerably reduced or weak. Wing subhyaline, with a light brownish tint along costal margin; first posterior cell narrowly open a trifle before extreme wing tip; hind cross vein nearer small cross vein than cubitulus; latter without stump or fold; third vein with 2 or 3 small hairs near base; costal spine minute; epaulet and subepaulet black; calypter transparent, pale tawny.

Abdomen ovate, shining black, without any dorsal macrochaetae, marginal bristles on three basal segments hardly differentiated from hairs but somewhat stronger or bristly on anal segment which also bears longer but appressed hairs on upper surface; genitalia retracted within tip of abdomen.

Length, 5 mm. Male unknown.

Holotype: Marion Mt. Cmp., San Jacinto Mts., Calif., July 1, 1952 (E. M. Evans).

ON THE REAPPEARANCE OF A POSSIBLE ANCESTRAL CHARACTERISTIC IN A MODERN CHILOPOD (CHILOPODA: SCOLOPENDROMORPHA: CRYPTOPIDAE).

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It is not unreasonable to assume that the remote ancestors of the modern pleurostigmophorous centipedes bore a pair of laterally-disposed spiracles (stigmata) on each pedal somite and that in the course of their long evolution, depending upon the group, certain of these pairs of spiracles have been lost. This could account for the variability that we encounter in the number of spiracle-bearing somites of modern centipedes. In the order Geophilomorpha each pedal somite, except the first and the last usually,[2] bears a

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[2] The only known exception is the Fijian genus *Azygethus* whose members reputedly have ultimate pedal spiracles.

pair of spiracles. But if we turn to the Lithobiomorpha and Scolopendromorpha, we find this evidently primitive plan usually modified in the direction of reduction. The two non-geophilomorphous extremes would seem to be found in the scolopendromorph genus *Plutonium*, where each pedal somite but the first and the last bears spiracles, and in the lithobiomorphous *Catanopsobius*; here only pedal somites three and ten bear spiracles.

Within the Scolopendromorpha all species possess spiracles upon the eighth pedal somite, but in addition certain species have seventh pedal somite spiracles; the majority do not. The presence of seventh somite spiracles seems to characterize the generic rather than familial or ordinal levels, for such a condition is encountered in several genera of the Otostigminae (Scolopendridae) as well as in three genera of the Cryptopidae. One is inclined to regard *the loss* of seventh somite spiracles in the remaining genera of each family as evidence of parallel evolution in this character. Here of course we assume the seventh somite spiracles to be primitive possessions.

In the New World two genera, otherwise fundamentally very similar, differ in that the species of one, *Dinocryptops* (formerly *Scolopocryptops*, 3, p. 96), possess seventh somite spiracles, whereas the more numerous species of the other, *Scolopocryptops* (formerly *Otocryptops*, 3, p. 96), do not. That this is a sound generic distinction cannot, at the present state of our knowledge, be seriously doubted.

The close evolutionary relationship between these two genera seems to be fortified by a bizarre specimen recently collected in Kentucky by T. J. Spilman of the United States National Museum. This specimen, clearly a member of the familiar eastern North American species *Scolopocryptops sexspinosa* (Say), does possess poorly-developed seventh pedal somite spiracles. (It will be recalled that in this genus the seventh somite lacks spiracles, that they are present in *Dinocryptops*.) This aberrant condition has never before been found, at least in the multitude of *sexspinosa* specimens that I have examined.

Upon studying the macerated seventh right and left pleura, it was seen that their spiracles, though noticeably smaller than those of the eighth somite, must have been functional for each gives rise to a reduced though otherwise typical tracheal tree. In each case the spiracle is situated in the free pleural membrane beneath, not between, the two successive stigmopleurites. In the eighth pleuron each normal spiracle lies between, not beneath, the two successive stigmopleurites.

Of course the suggestion comes to mind that this condition is an atavism, a phenomenon engendered possibly by the reproduction of a previous genetic condition through fortuitous recombinations of genes. On this basis, and taking into consideration the numerous other fundamental features common to the species of both genera, *Scolopocryptops* and *Dinocryptops* would seem phylogenetically very closely related.

But the discovery of this single atypical specimen gives rise to other speculations too. It compels one to wonder whether another such specimen might have been the partial basis for the baffling reports that *Dinocryptops miersii* (Newport) occurs naturally in the United States.

The belief that this form inhabits the United States seems to spring from two sources. In 1893 Bollman (2, pp. 128, 177), who admitted he was unfamiliar with the species, cited California as a *miersii* locality. He specified Kohlrausch and Karsch as the authorities for this information. However none of them apparently was aware of the spiracular difference between *miersii* and the members of the related genus *Scolopocryptops* (formerly *Otocryptops*). For instance, Kohlrausch (4, pp. 53, 55) in 1881, speaking of *Scolopocryptops* (with *sexspinosa* and *miersii* included) stated its species possess *ten pairs* of spiracles; this excludes seventh somite spiracles. In addition he regarded *miersii* as a junior synonym of *sexspinosa;* today they are not even considered congeneric.

Bollman quoted Karsch, whose key allied both *sexspinosa* (plus some of its true congeners) with *miersii* within the same genus. It is important to note that the Bollman-Karsch key (2, p. 177) distinguishes *miersii* (in California) on the basis of its marginless cephalic plate but without mentioning its seventh somite spiracles. This leads one to suspect that the California citation for *miersii* could very well have been based upon the well-known Californian *Scolopocryptops gracilis* which lacks cephalic margins, and which is congeneric with *sexspinosa* but not with *miersii*. In summary, I suggest that the report of *miersii* from California may have arisen from an initial misidentification.

The second source was Kraepelin who in 1903 (5, p. 78) reported *miersii* "vom wärmeren Nordamerika (Georgia, Virginia, Kalifornien ? . . . ", thereby presenting records that apparently had not previously appeared in the literature, except in so far as they were indirectly hinted at by Meinert who remarked in 1886 that "This species seems to prefer the more southern parts of North America" (6, p. 181). At the same time Meinert cited a number of New World localities but none in North America. The Attems' distri-

bution of 1930 (1, p. 256) is clearly based upon Kraepelin's 1903 information.

Furthermore Kraepelin believed *uiersii* to occur in Indiana because of his erroneous contention that Bollman's *S. calcarata* (2, p. 133) is probably a junior synonym of *uiersii*, viz. "Der *S. calcaratus* Bollm. von Indiana mit bürstenförmig behaarten Endglieder der Analbeine is vermutlich das ♂ der Art." It seems certain, however, that the Bollman species is a junior synonym of *S. nigridia* McNeill (7, p. 333).

Explaining the Georgia and Virginia records is more difficult. None the less, I strongly suspect them to be invalid and believe they may be clarified in one of two ways. Kraepelin stated he had access to material borrowed from the United States National Museum. It is possible that he discovered there one or more aberrant specimens which he did not recognize as *nigridia* or *serspinosa* because of their abnormal possession of seventh somite spiracles. The other possibility is suggested by the question mark with which Kraepelin suffixed his states distribution. If he himself was uncertain of the reliability of his data, the heirs of this information can do no more than hold it in equal suspicion. Possibly he *guessed* Georgia and Virginia to be northern extensions of the more southern range arbitrarily alluded to by Meinert in 1886.

References

1. **Attems, C.** 1930. Scolopendromorpha. Das Tierreich, 54: 1–308.
2. **Bollman, C.** 1893. The Myriopoda of North America. Bull. U. S. Nat. Mus., 46: 1–210.
3. **Crabill, R.** 1953. Concerning a new genus, Dinocryptops, and the nomenclatorial status of Otocryptops and Scolopocryptops. Ent. News, 64: 96.
4. **Kohlrausch, E.** 1881. Gattungen und Arten der Scolopendriden. Tröschel's Archiv für Naturgeschichte, 47: 50–132.
5. **Kraepelin, K.** 1903. Revision der Scolopendriden. Mitt. Hamburg. Museum, 20: 1–276.
6. **Meinert, F.** 1886. Myriapoda Musei Cantabrigensis (Part I.) Proc. Amer. Phil. Soc., 23: 161–233.
7. **McNeill, J.** 1887. Descriptions of twelve new species of Myriopoda, chiefly from Indiana. Proc. U. S. Nat. Mus., 10: 328–334.